

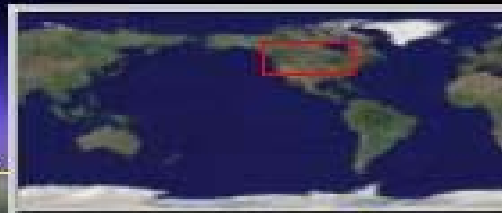
PLJV Implementation Planning



Partners in Flight Conservation Design Workshop

Saint Louis, MO

April 11-13, 2006



Montana

North Dakota

Minnesota

South Dakota

Wisconsin

Wyoming

Iowa

Nebraska

Colorado

Kansas

Oklahoma

Mexico

Image © 2006 TerraMetrics
Image © 2006 NASA

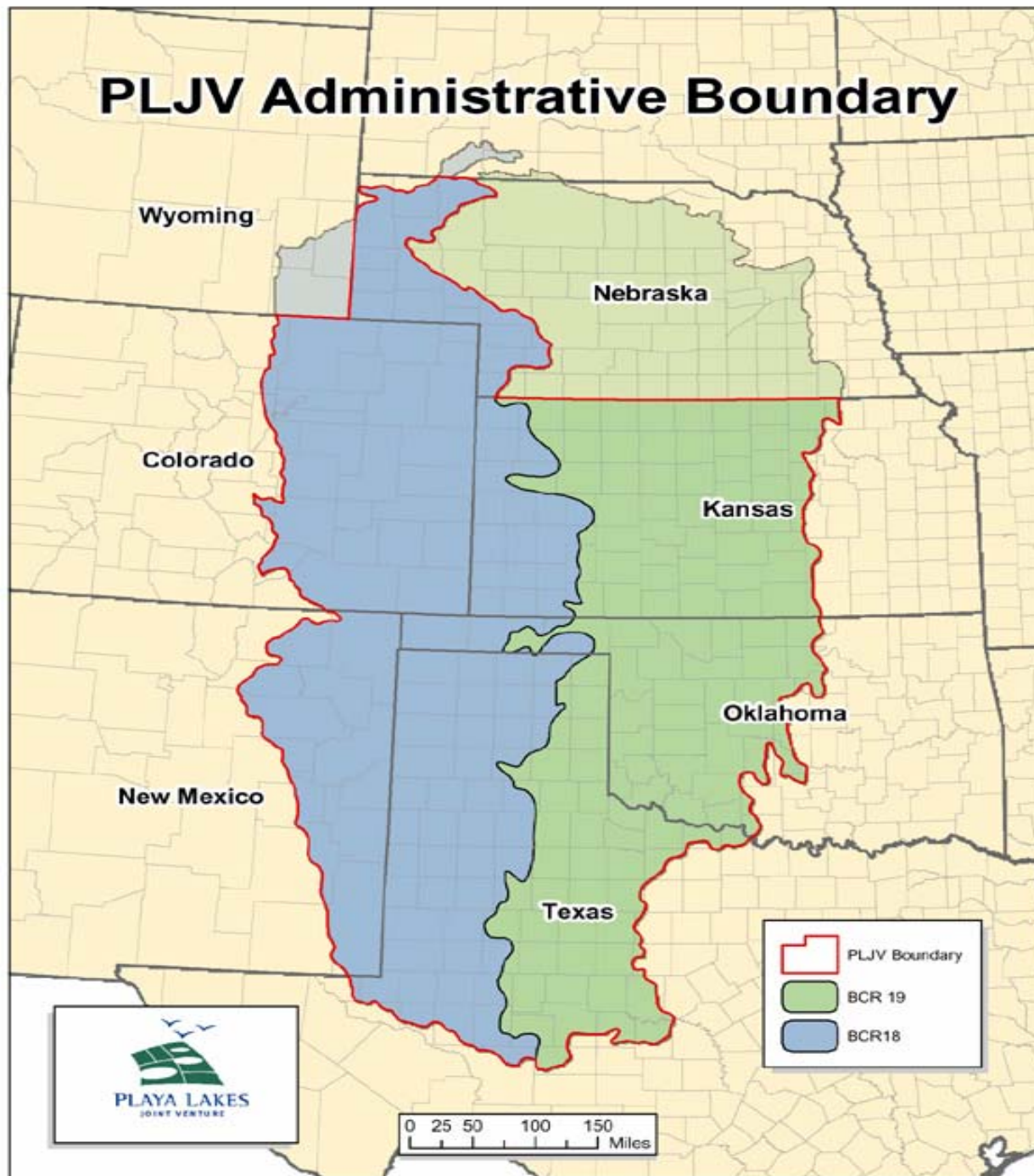
Google

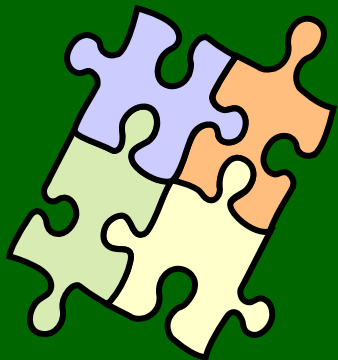
2°04'31.16" W

Streaming ||||| 100%

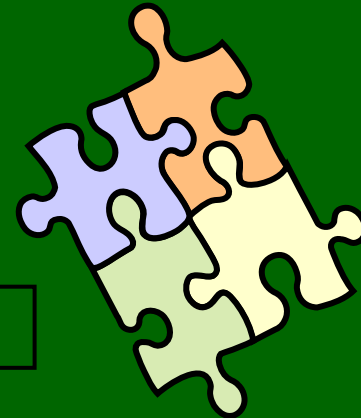
Eye alt 619.68

PLJV Administrative Boundary

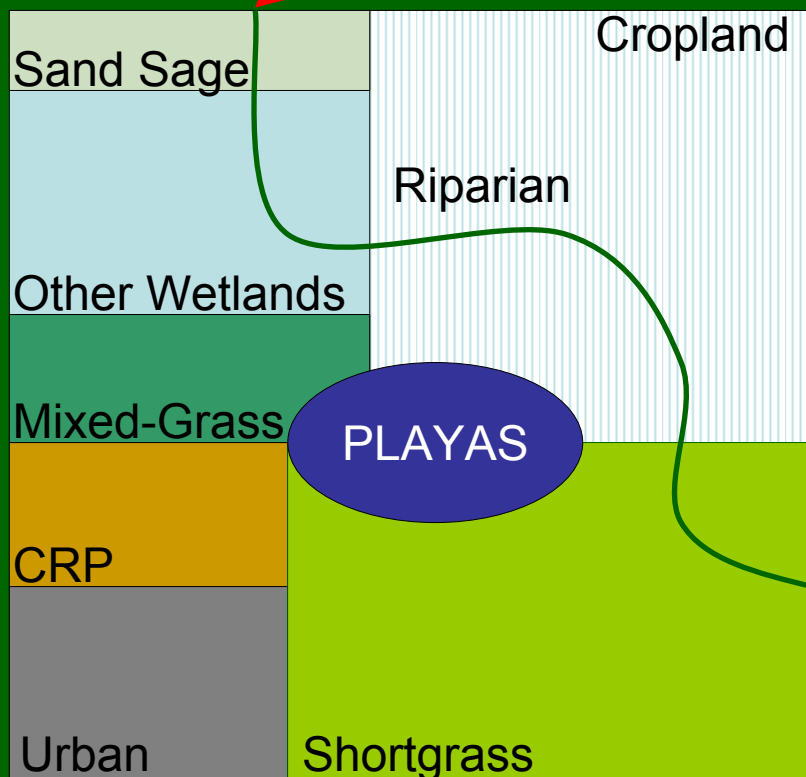




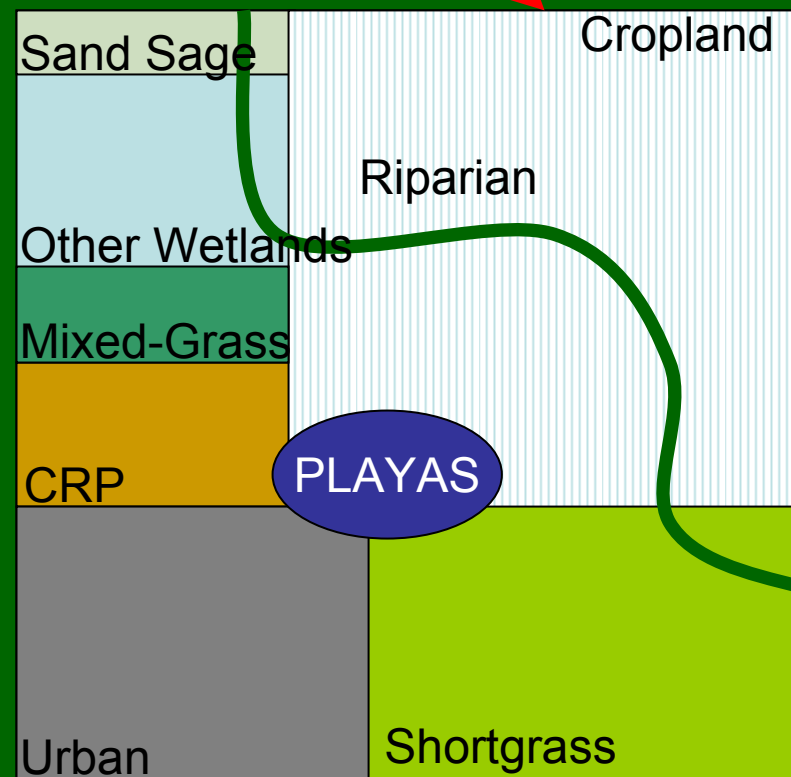
The All Bird Puzzle



waterfowl, shorebirds, waterbirds, landbirds



Current



Future

A Hierarchical Structure

- **AREA** (BCR part of a state)
- **ASSOCIATIONS** (habitats with associated species)
 - **CONDITIONS** (Variations within habitat associations)
 - **SEASONS** (Breeding, Non-breeding, months, etc)
 - **SPECIES** (Found in each condition of each association)

Relationships are complex but can be simplified:

Acres of Habitat in an Area

X

Density/use-days of a Species

=

Estimated current carrying capacity of a Species

÷

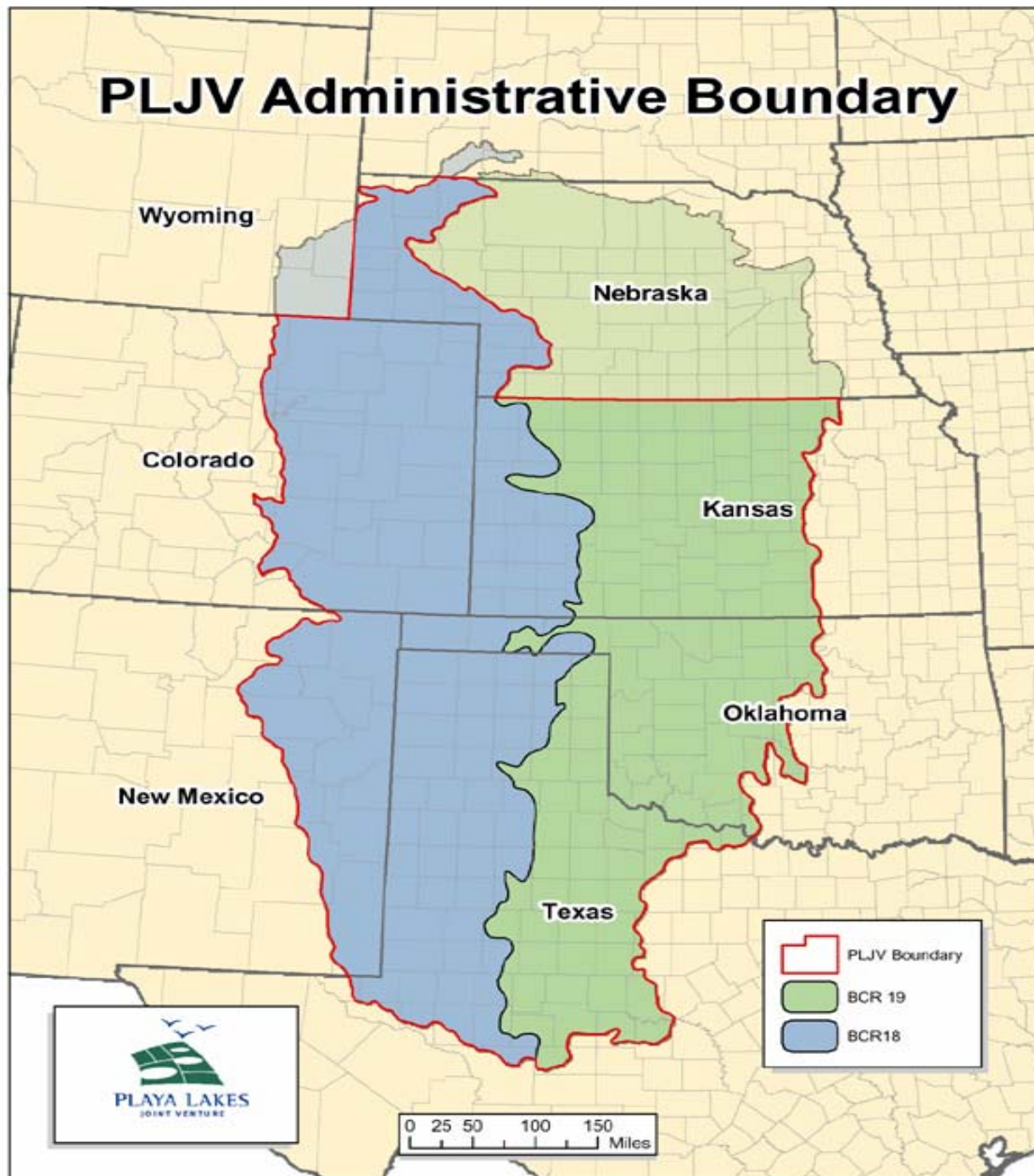
Population Objective for the Area

=

% of Goal for Area

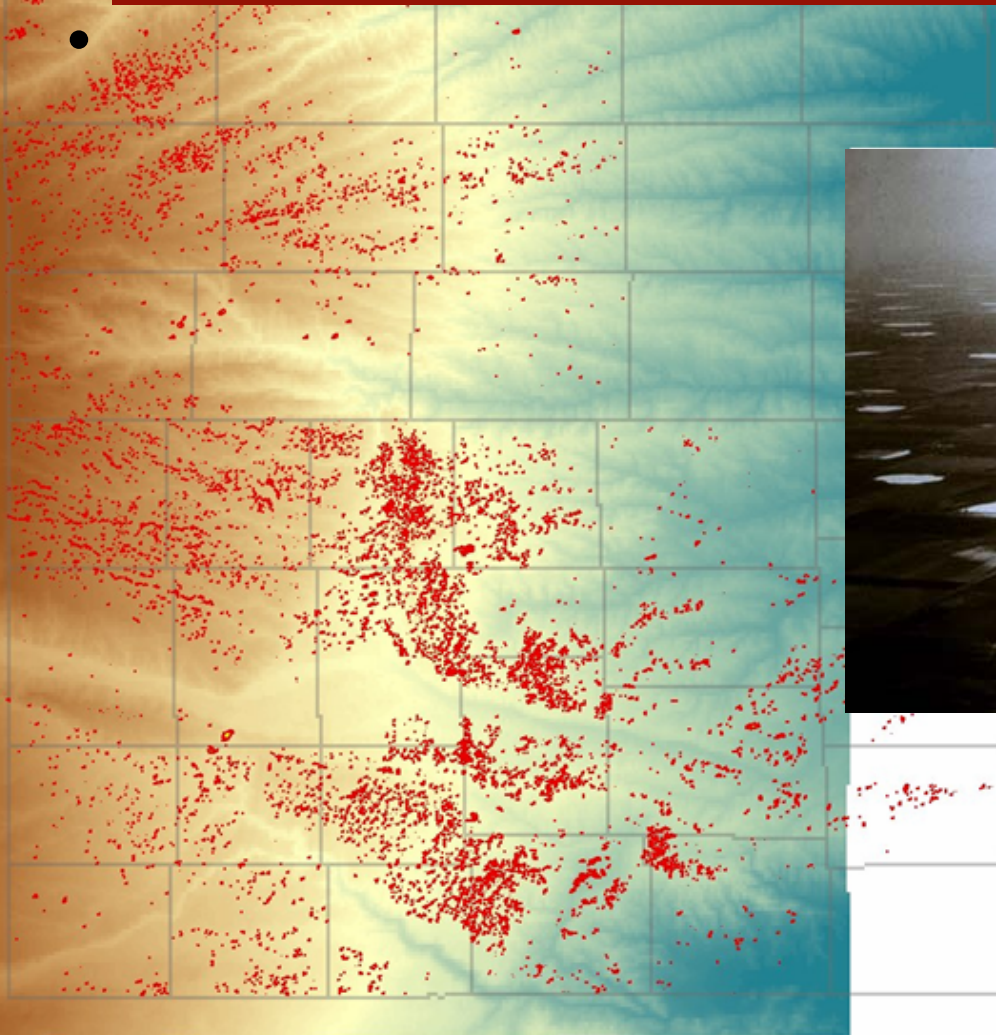
Then, if needed, develop habitat to meet goal.

PLJV Administrative Boundary



Playas in BCR 18 - KS

Source: Soil Surveys mapped by Johnson et al. at Univ. of Kansas



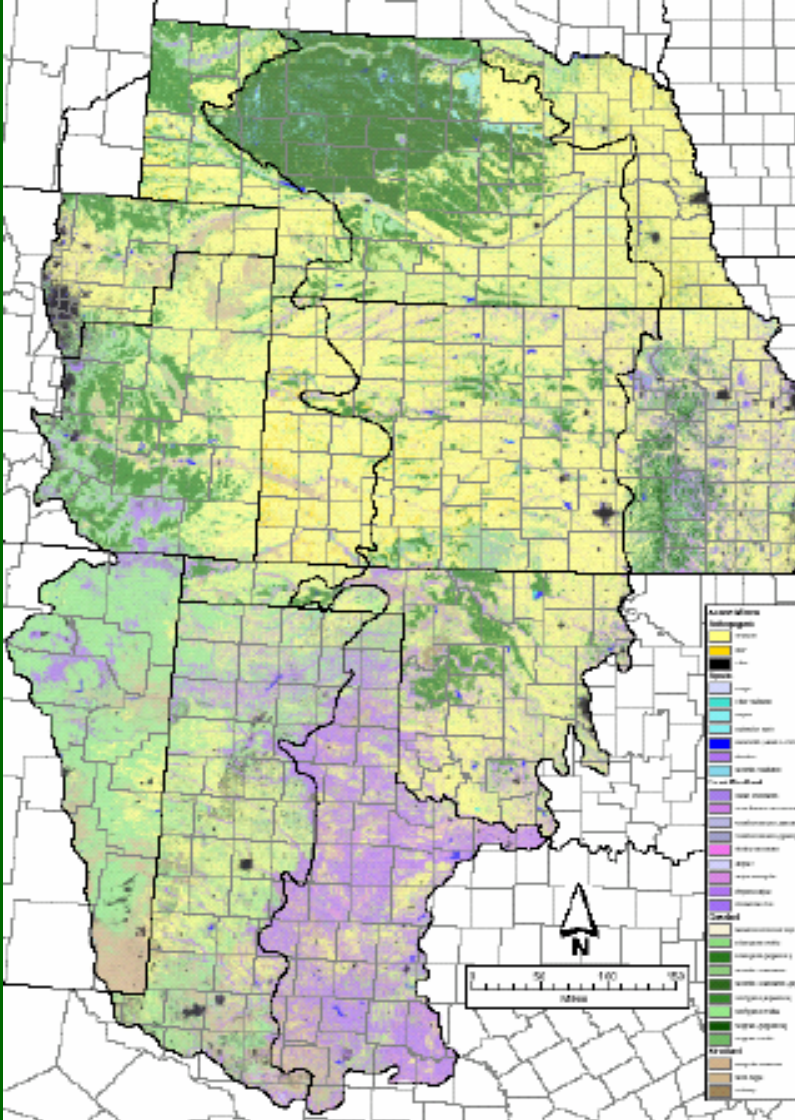
Total Playa Soil Polygons = 10,252
Total Area = 432,998,991 square meters
Mean Area = 42,235 square meters
Std. Deviation = 105,573 square meters

Consistent Landcover

TEXAS GAP (BCR 19)

GAP LANDCOVER TYPE	PLJV ASSOCIATION
Annual Graminoid or Forb Vegetation	Mixed Grass
Bare Soil	Cropland or Other
Cloud	Other
Cold-Deciduous Woodland	Juniper - Mesquite
Cropland (irrigated, row, herbaceous, etc.)	Cropland
Evergreen Extremely Xeromorphic Subdesert Shrubland	Other
Extremely Xeromorphic Deciduous Shrubland	Juniper - Mesquite
Int. Flooded Temperate or Subpolar Grassland (e.g., Playa Lakes)	Playa
Lowland Mixed Evergreen - Drought Deciduous Shrubland	Mesquite Savannah
Medium-Tall Bunch Temperate or Subpolar Grassland	Mixed Grass
Microphyllous Evergreen Shrubland	Sand Sage
Round-Crowned Temperate or Subpolar Needle-Leaved Evergreen Woodland	Juniper
Sand Flats	Other
Sclerophyllous Temperate Broad-Leaved Evergreen Shrubland	Shinnery
Semipermanently Flooded Temperate or Subpolar Grassland	Riverine

and bird species associated with them.



Conditions: Un-mappable aspects of associations (*used* NASS Ag. stats)

Cropland		6,692,262		% of Assoc.
	Alfalfa		166,200	0.025
	Corn		965,400	0.144
	Hay		68,500	0.010
	Peanuts			0.000
	Sorghum		1,003,200	0.150
	Soybeans		85,500	0.013
	Sunflowers		81,400	0.012
	Wheat		2,258,800	0.338
	All Other Crops		2,063,262	0.308
	TOTAL		6,692,262	1.000

Relationship to Habitat

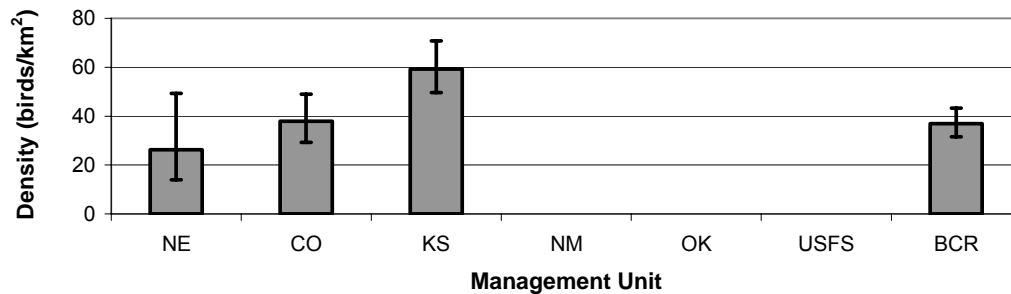
Table 37.1. Bell's Vireo breeding density by habitat and geographic area.

Habitat Area	D (birds/ac)	Comments	Reference
Mixed grass prairie			
BCR19-NE	0.0008	Upland prairie	Faanes & Lingle 1995
Riparian woodland			
BCR19-NE	0.0178		Faanes & Lingle 1995 ^a
BCR19-NE	0.0162		Davis 2000; see also Colt 1997
BCR19-OK	2.91	Early seral stage	Byre & Kuhnert 1996 ^b
SD	0.0	Early seral stage	Rumble & Gobeille 2004
SD	0.0	Early-mid seral stage	Rumble & Gobeille 2004
SD	0.004	Mid-late seral stage	Rumble & Gobeille 2004
SD	0.008	Late seral stage	Rumble & Gobeille 2004
Grassland-shrub			
MO	0.0891		Budnik et al. 2000
Unspecified			
BCR19-OK	0.200		Baumgartner & Lawrence 1954
OK (statewide)	0.180		Baumgartner & Baumgartner 1992

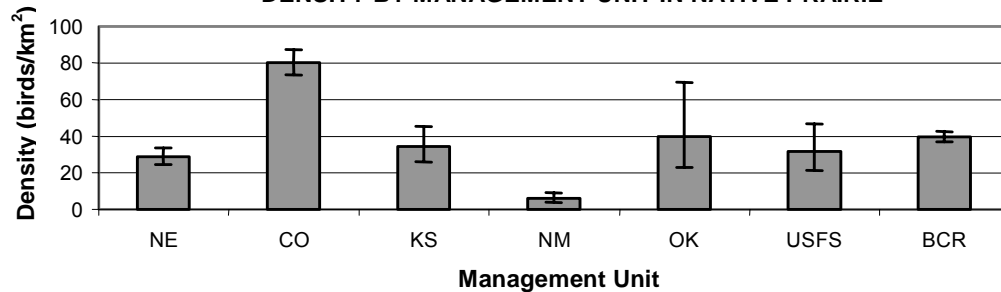
^a Note that Faanes and Lingle (1995) found much higher densities (0.2186 birds/ac) on river channel islands.

^b Note that this density estimate is exceptionally high and

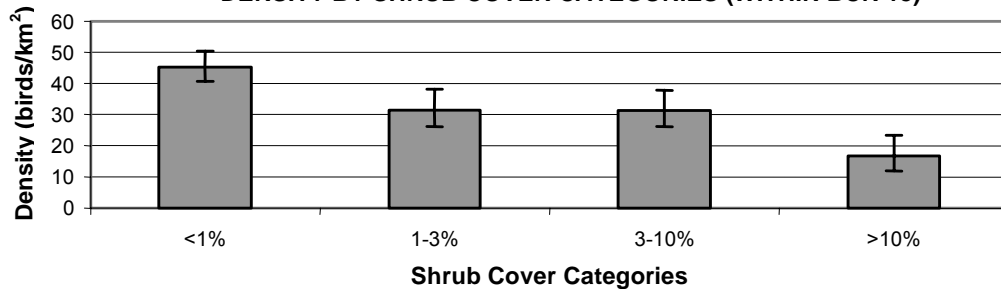
DENSITY BY MANAGEMENT UNIT IN DRYLAND AGRICULTURE



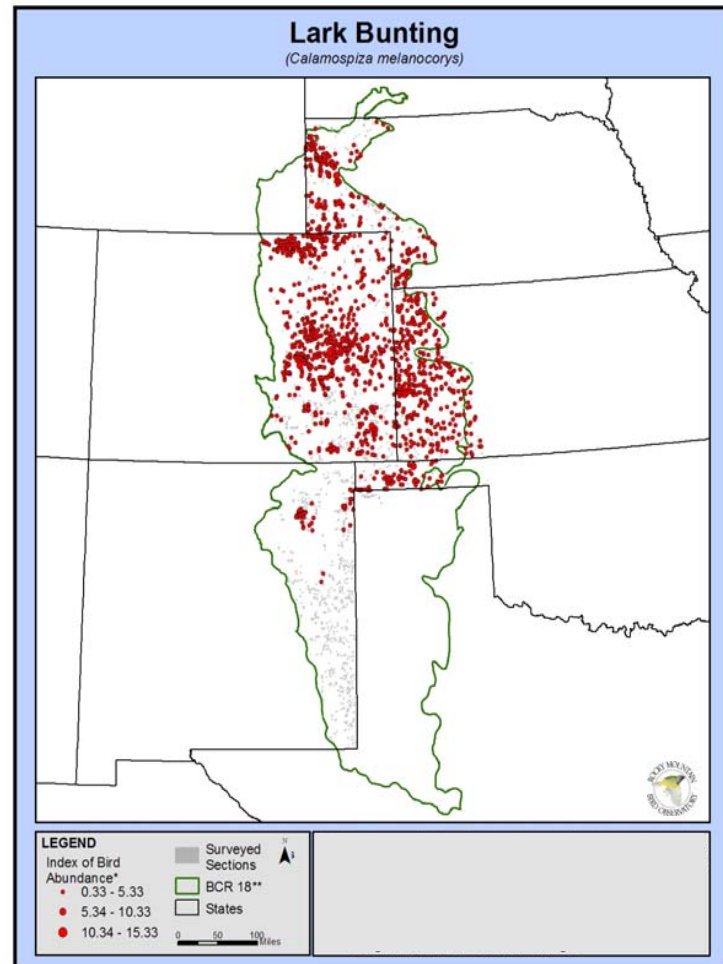
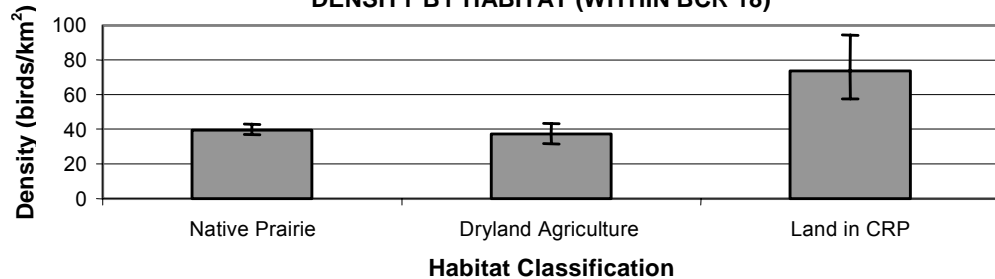
DENSITY BY MANAGEMENT UNIT IN NATIVE PRAIRIE



DENSITY BY SHRUB COVER CATEGORIES (WITHIN BCR 18)



DENSITY BY HABITAT (WITHIN BCR 18)

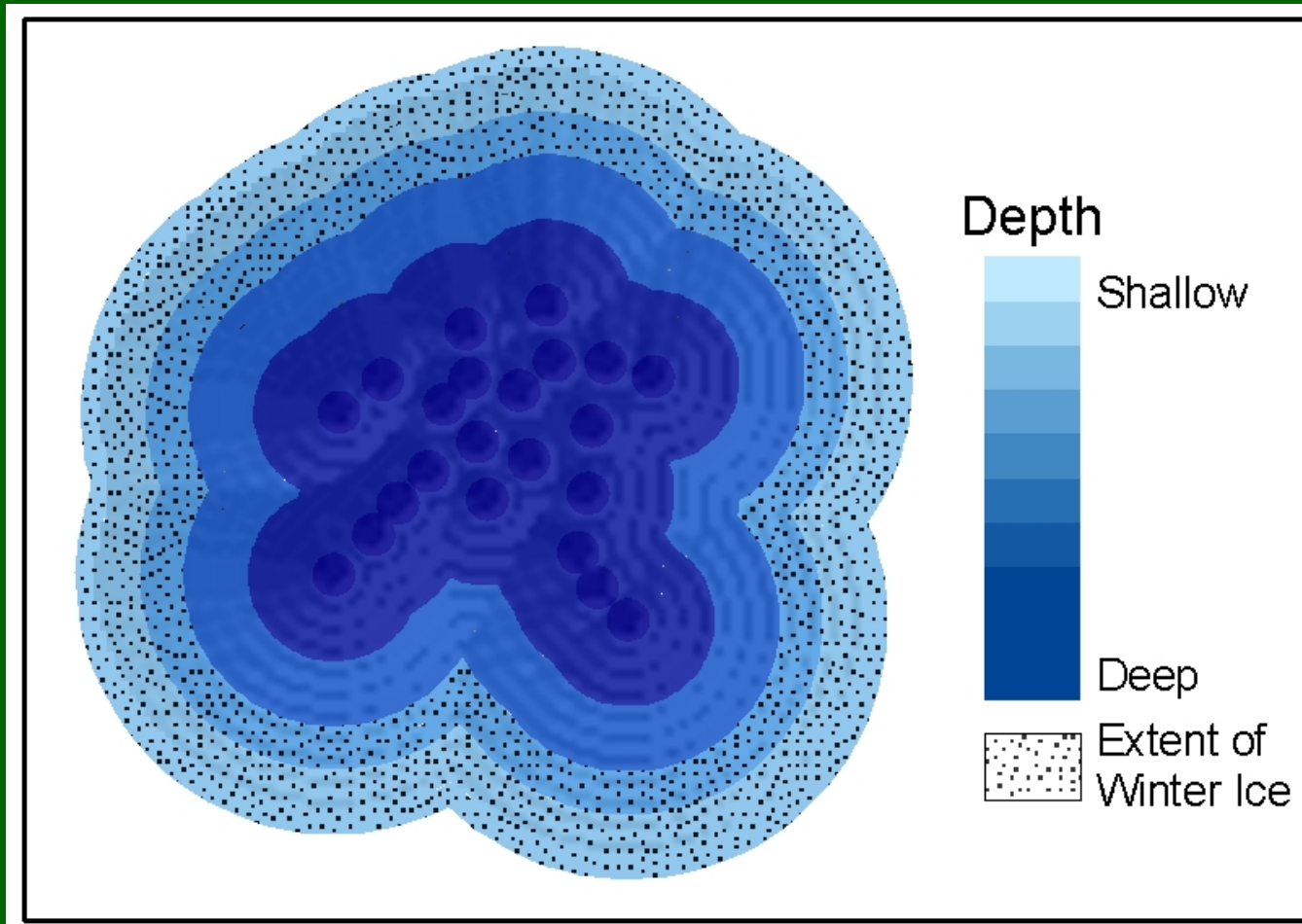


Breeding Densities

BCR 18 – KS : BRSP (0.0032/Faanes and Lingle 1995)
“Density over 11 yrs. in upland prairie in w-central NE.
Assumed habitat was sand sage (per Molhoff 2001).
Density is appropriate as BRSP is at eastern edge of range
in both NE and KS.”

BCR 19 – OK: GRSP (0.0015/Wiens 1973) “Density from
grazed mixed grass prairie in SD. Based on BBS density
maps, SD GRSP density is, on average, 10 times the
density in BCR 19-OK. Density adjusted accordingly.”

Other factors

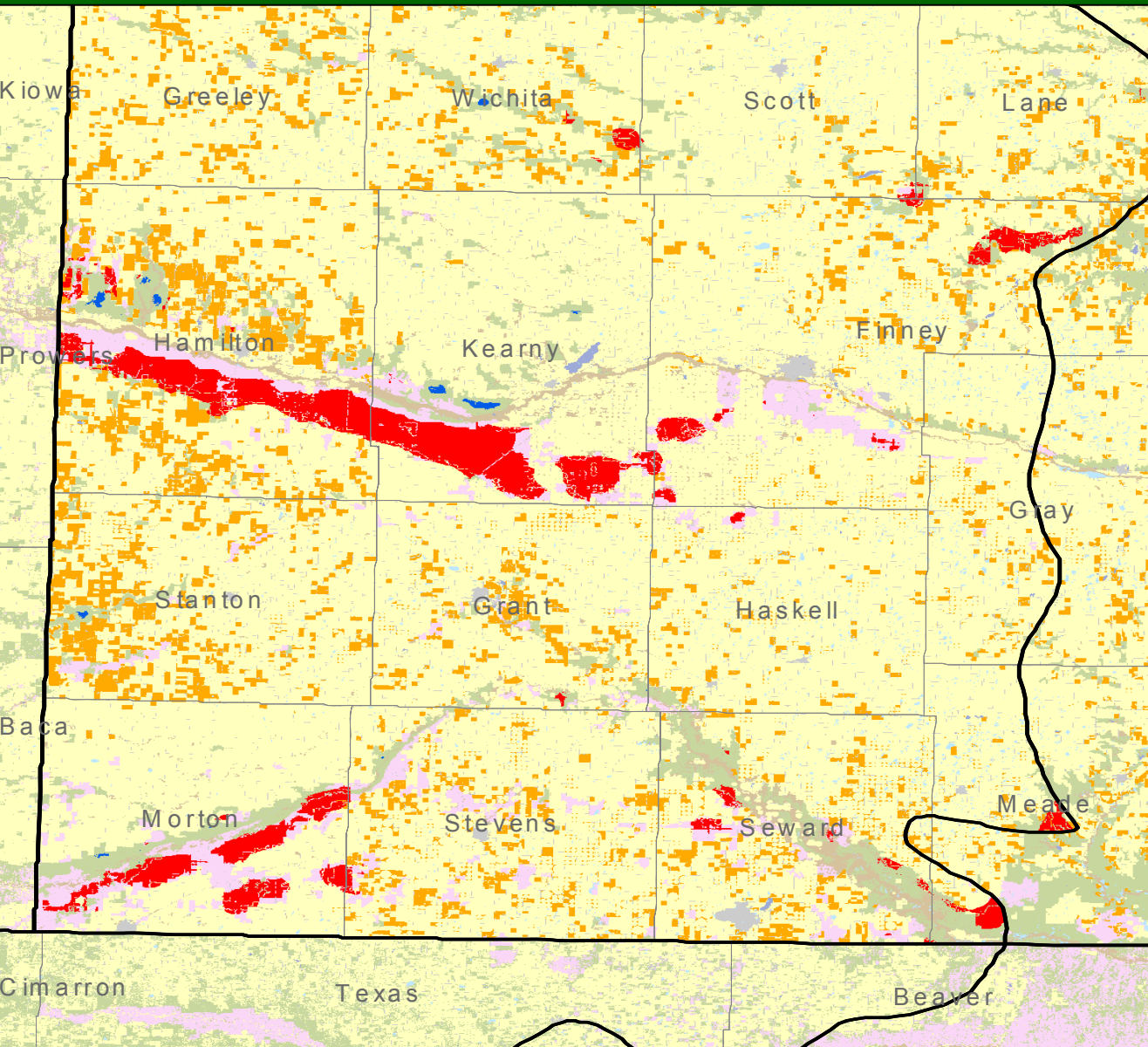


Large Blocks

Lesser Prairie-Chicken in Grass/SandSage

- Associations: Mixed grass, Sandhills Grassland, tall grass, shortgrass, shinnery, sand sage, wet meadow and moist soil units (Min. 2,000 ac)
- Woodland (includes riparian shrub/canopy and mesquite) - ≤ 50 ac.
- Cropland - $\leq 3,000$ ac of Cropland and CRP combined.
- All water associations: < 100 ac
- Road Acreage: No 4 lane roads. And < 50 ac.
- Window Size – **5,000** ac

Mapped Large Blocks



BCR 18 – KS

**Red - Lesser
Prairie-Chicken**

**Blue - Long-
billed Curlew**

Model

$$\begin{aligned} & \text{Acres of Association} \\ & \quad \times \\ & \quad \% \text{ of Condition} \\ & \quad \times \\ & \text{Suitability} \times \text{Availability} \times \text{Large Blocks} \\ & \quad \times \\ & \quad \text{Units} \\ & \quad = \\ & \text{Current Carrying Capacity} \end{aligned}$$

Percent of Goal by Area

Species Name	BCR 18 - CO	BCR 18 - KS	BCR 19 - KS	BCR 19 - OK	BCR 19 - TX
Bell's Vireo	0.60	0.13	0.80	1.04	0.79
Black-crowned Night-Heron	0.38	0.03	0.18	0.04	0.68
Burrowing Owl	0.52	0.37	0.00	0.00	0.32
Cassin's Sparrow	0.43	0.64	0.57	1.07	0.23
Dickcissel	0.62	1.60	1.26	0.77	0.45
Least Tern	0.74	0.00	1.69	1.05	0.38
Lesser Prairie-Chicken	0.29	0.17	0.20	0.32	0.47
Long-billed Curlew	0.54	0.58			
Shorebirds-Nonbreeding-Wetland	0.13	2.26	0.48	0.71	111.70
Waterfowl-Nonbreeding	3.80	6.99	5.53	1.05	0.26
Waterfowl-Nonbreeding	2.24	4.14	3.30	0.66	0.10

% of Goal within BCR 18 - CO

Species Name	Cropland	CRP	Mixed Grass	Other	Pinyon/J	Playa	Ponderosa	Reservoirs	Riverine	Sand Sage	Shortgrass
Bell's Vireo									0.60		
Black-crowned Night-Heron				0.00		0.01		0.31	0.05		
Burrowing Owl											0.52
Cassin's Sparrow		0.00	0.00							0.14	0.29
Dickcissel	0.30	0.00	0.00	0.00					0.31		
Least Tern				0.00				0.00	0.74		
Lesser Prairie-Chicken		0.00	0.01							0.28	
Lewis's Woodpecker					0.39		0.07		0.03		
Long-billed Curlew			0.00			0.01					0.53
Waterfowl-Nonbreeding	0.00			0.14		0.09		0.29	3.28		
Waterfowl-Nonbreeding	0.00			0.08		0.05		0.17	1.93		

Effects of burning and grazing mgmt.



HABS Database Report

Project Name: Unnamed
Project Description: HABS version 4/4/20
Project Location: BCR 19 -

Grasshopper Sparrow Breeding Season

Habitat:	Current Acres:	Future Acres:	Carrying Capacity Current	% of Goal Current	Carrying Capacity Future	% of Goal Future
Mixed Grass - Few	0	2,000,000	0.0000	0.0000	124,600.0000	32.7000
Mixed Grass - Ma	2,000,000	0	3,000.0000	0.7900	0.0000	0.0000
Grasshopper Sparrow Totals			CC Total, Current	% Goal Total, Current	CC Total, Future	% Goal Total, Future
			3000	0.79	124600	32.7

Lark Sparrow Breeding Season

Habitat:	Current Acres:	Future Acres:	Carrying Capacity Current	% of Goal Current	Carrying Capacity Future	% of Goal Future
Mixed Grass - Few	0	2,000,000	0.0000	0.0000	128,800.0000	14.7100
Mixed Grass - Ma	2,000,000	0	342,600.0000	39.1400	0.0000	0.0000
Lark Sparrow Totals			CC Total, Current	% Goal Total, Current	CC Total, Future	% Goal Total, Future
			342600	39.14	128800	14.71

in BCR 19 - Oklahoma

Habitat Optimization

Lewis's Woodpecker

- 1) Leave Pinyon-Juniper alone
- 2) Increase the management of Ponderosa Pine so that 80% of all forest has few trees and a grassy understory
- 3) Manage all Riparian habitat in the Arkansas Valley so that exotic riparian shrubland and all early successional riparian forest is replaced with late successional forest. 55% with a grassy/shrubby understory.

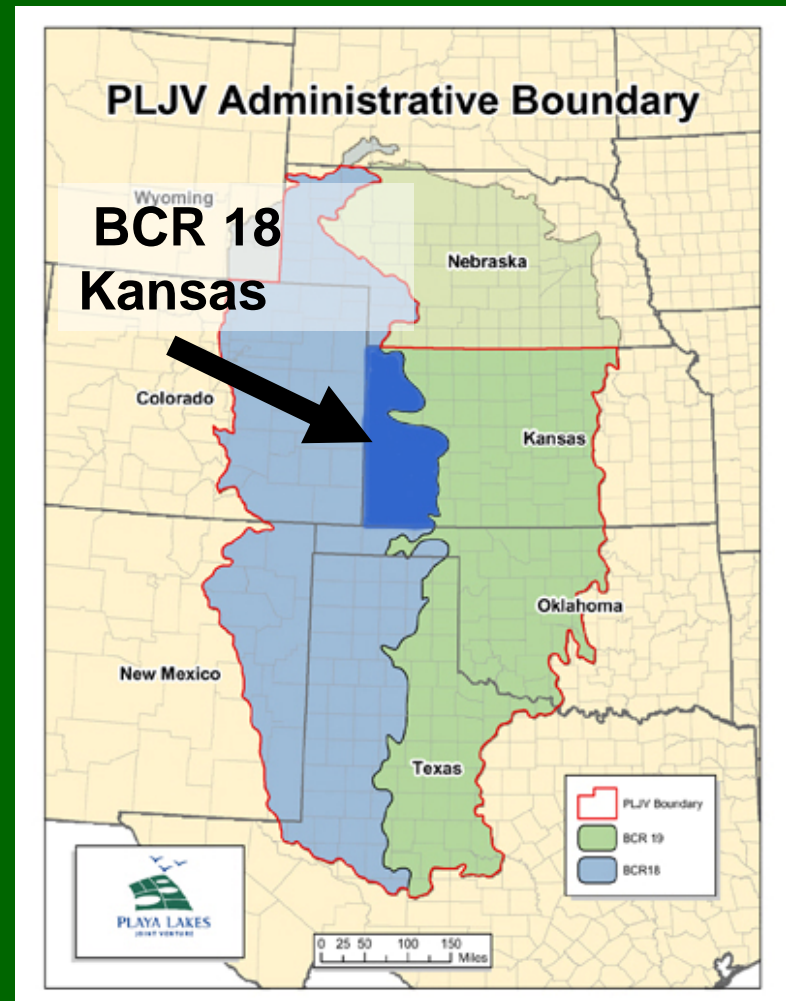
Effects LEWO Habitat Work on Other Birds

Lewis's Woodpecker	48%	97%
Northern Bobwhite	4.8%	5.8%
Black-crowned Night-Heron	5.4%	11.7%
Swainson's Hawk	.001%	.003%
Red-headed Woodpecker	11%	24%
Pinyon Jay	52%	52%
Lark Sparrow	36.7%	36.7%
Bullock's Oriole	15.5%	16.5%

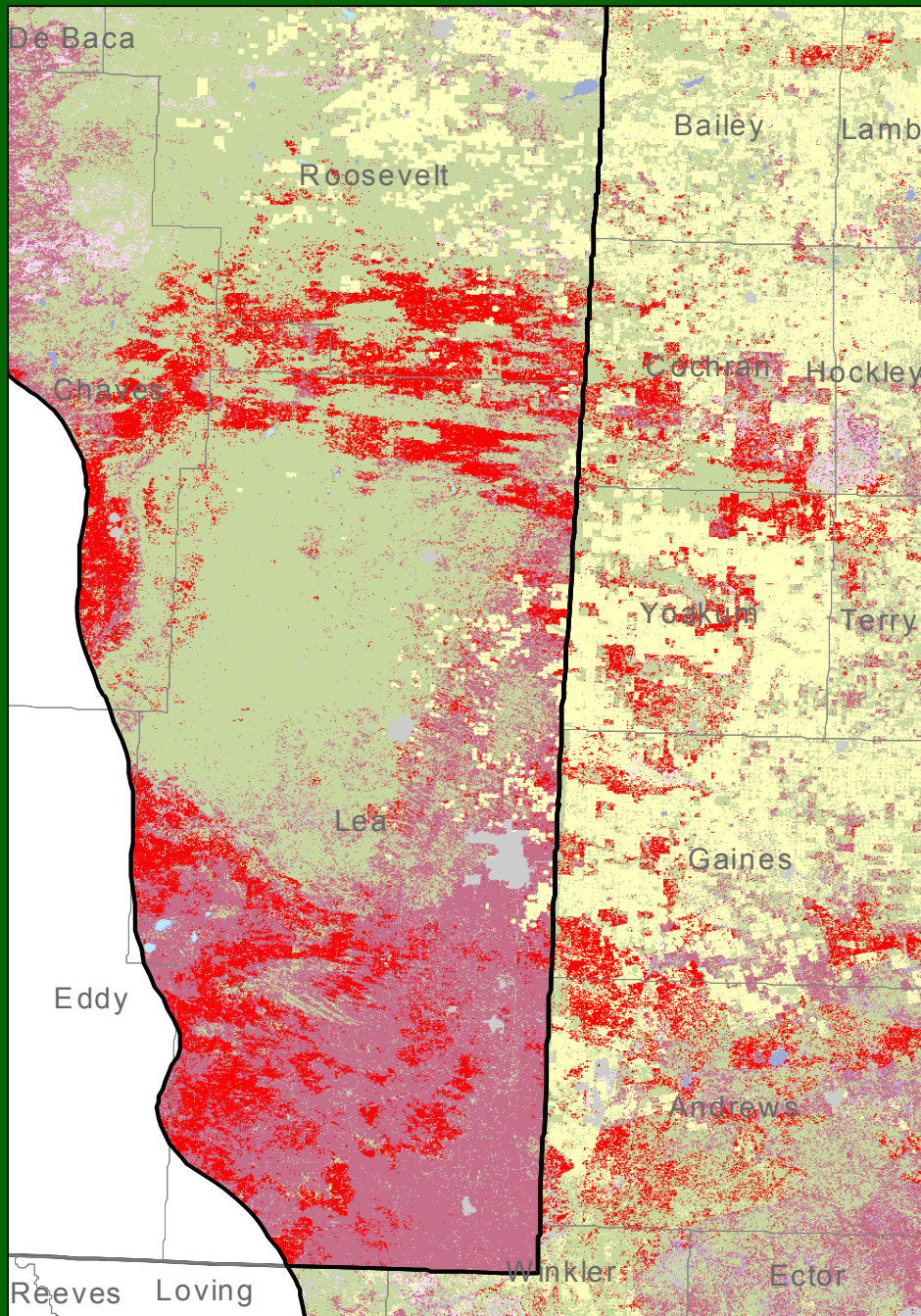
End Product:

Area Implementation Plan (AIP)

- Simple, specific, updateable
- Shows current and desired acres of habitat
- Describes specific habitats and priority species for work in that area
- Represents habitat goals over 30 years and reveals the magnitude of conservation work needed.
- Provides support for developing new conservation initiatives or tweaking existing ones
- Provides justification for budgetary requests

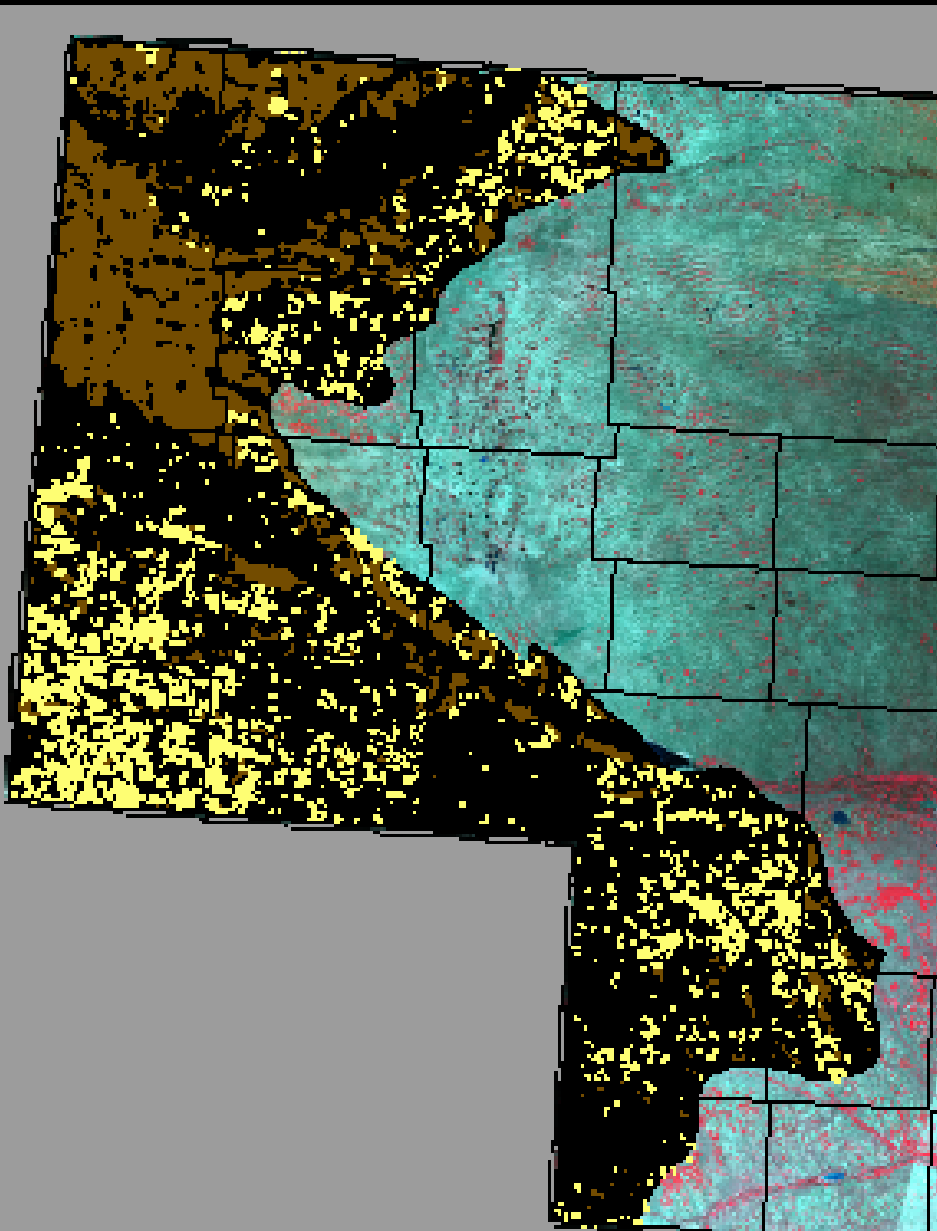


BCR 18 NM-TX shinnery



GIS Process:

All grassland habitat in BCR 18 - NE



All:

4,699,511.8 Acres

4,368,324.3 **Grassland**

337,838.8 **CRP**

Strengths

- Effects of habitat manipulation on all species of concern evaluated simultaneously
- Highlights alternatives to object achievement
- System is flexible and adaptable
- Quick and relatively inexpensive
- Appropriate specificity, given the capacity that partners have to implement landscape level change



Concerns



- Many assumptions eg. % of association can change rapidly
- Patchily distributed, low population species.
- Partial area coverage within natural range
- Species utilizing poorly captured habitat niches on the landscape
- Habitat trend unanalyzed
- Assumes that density is equated with recruitment

Partners In Flight



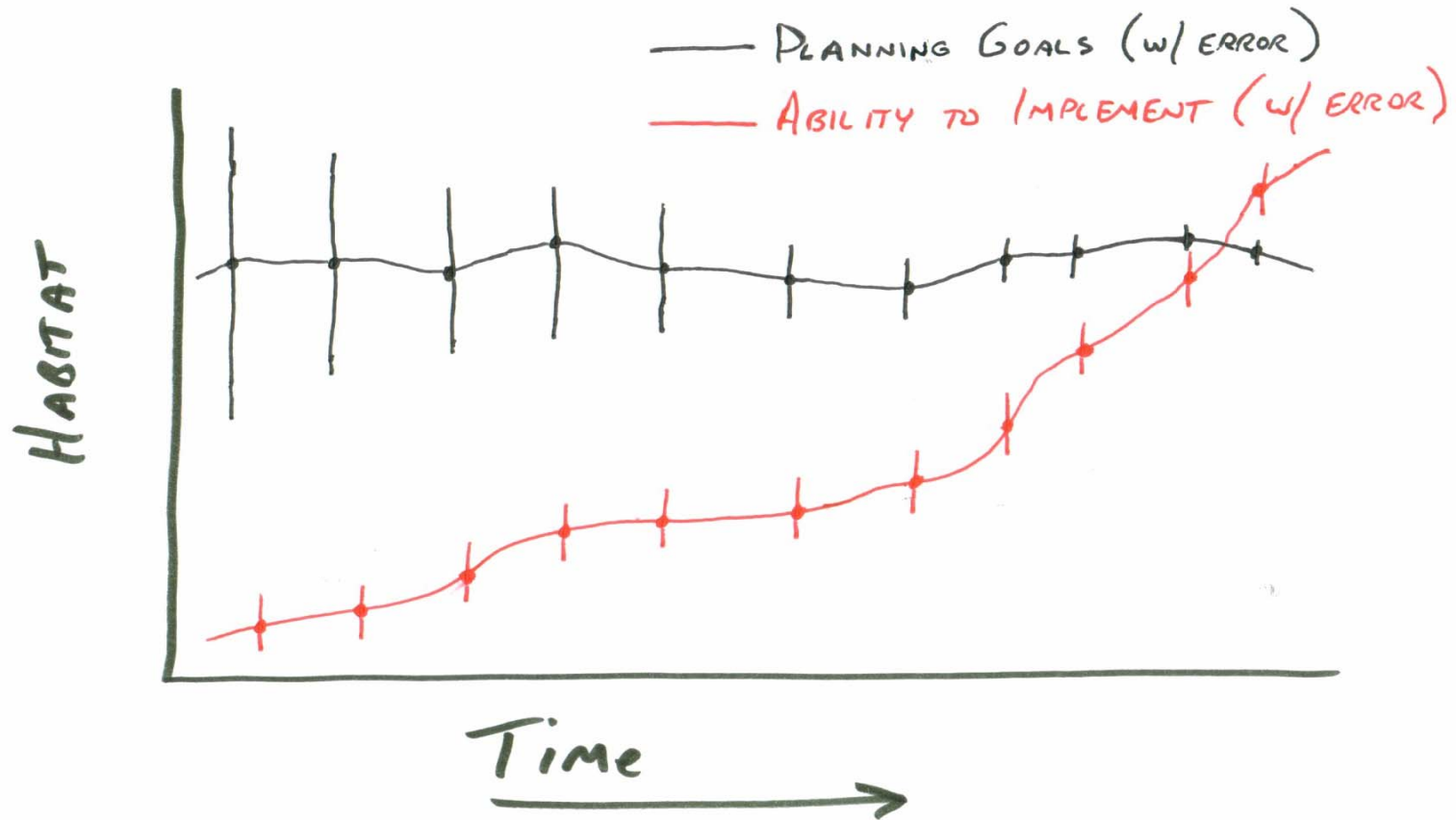
North American Landbird Conservation Plan

**Follows five
elements**

**General approach
tried in other areas**

**Works well with
PIF goals by area**

Where We Are...





www.pljv.org

Area: BCR 18 - CO Area Acres: 28,117,404

I-Plan Associations

Assoc Name: Sand Sage Option 1: Option 2: Option 3: Option 3 Acres: 0 Option 6: Option 6 Acres: 0
Assoc. Acre Update By: kc 3/30/06

Sample Screen Grab of Main Area Edit Form

I-plan cond to species

Assoc Acres: 2,124,976 PP Assoc Acres: 3,532,048

Condition Name: Low grass % of Assoc: 0.9500 Cond Acres: 0 Update by: CMR
Condition Ref: PP Prop of Assoc: 0.95000
PP Cond Acres: 1,320,500

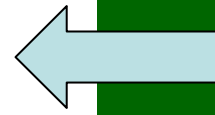
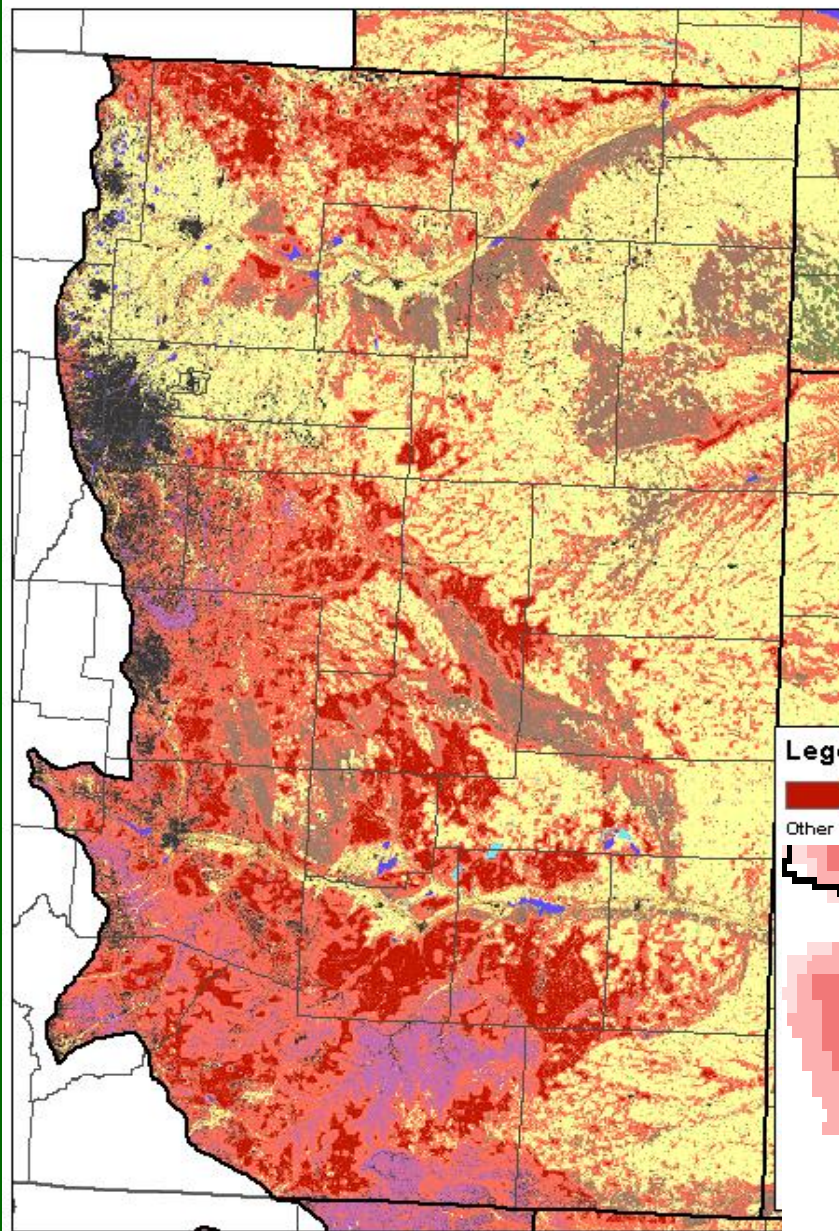
I-Plan Species

Species Name	Area Ref	Habitat Ref	Trend	Comments
Greater Prairie-Chicken	Kingery 1998	Kingery 1998		
Lesser Prairie-Chicken	Kingery 1998	Kingery 1998		
Scaled Quail	Kingery 1998	Kingery 1998		
Swainson's Hawk	Kingery 1998	Kingery 1998		
Western Kingbird	Kingery 1998	Kingery 1998		
Loggerhead Shrike	Kingery 1998	Kingery 1998		
Chihuahuan Raven	Kingery 1998	Kingery 1998		
American Tree Sparrow	Andrews and Right	Andrews and		

Record: 6 of 13

I-Plan Season

Season: Breeding Availability: 1.0000 Suitability: 1.0000 Units: 0.0122
Period: Avail. Ref: Suit. Ref: Unit Ref: RMBO 2003
CC Current: 24,628 Large Block: 1.0000 Unit Comment:
'04 Goal: 112,582 Trend Goal:
% of '04 Goal: 21.80% % of Trend Goal:
PP % of '04 Goal: 36.30% PP % of Trend Goal:
Assumed that Overall BCR 18 3-10% shrub cover on native prairie was equal to density in Sand Sage.



**Curlew model
output**

**BBS Curlew
Distribution
Map**

